

Name \_\_\_\_\_ Date \_\_\_\_\_ Per \_\_\_\_\_

### Speed, Velocity, and Acceleration Calcs

*Directions: You MUST **show your work** to receive full credit on the assignment! This means: write the equation you are using, plug in values, and solve w/ appropriate units!*

1. Calculate the speed for a car that went a distance of 138 km in 2.1 hours time.
2. What distance will a car traveling 62 km/hr travel in 3.4 hrs?
3. What distance will be traveled if you are going 120km/hr for 30 min? (trickier than it looks!)
4. How long will it take to travel 2,400 km traveling 10.5 km/hr? Then, convert to days.
5. If a rocket travels 25,600 km in 27.3 hours, what is its speed? Then, convert to m/s.
6. What is the acceleration of a sprinter who finishes the race traveling 23 m/s? She ran for 12.6 s.

7. What is the acceleration of a bike that goes from 38 km/hr to 7.8 km/hr in 4.7s?
  
  
  
  
  
  
  
  
  
  
8. A baseball is thrown a distance of 18 meters by a pitcher. It takes .25s to reach home plate. At home plate the ball is hit by the batter and launched 106m into left field. It takes 3.8 seconds for the ball to land in the stands for a home run. Was the ball traveling at a higher speed while being pitched or after being hit by the batter?
  
  
  
  
  
  
  
  
  
  
9. You drive a car from Philadelphia to Harrisburg in 2.2 hr. What is the car's velocity in km/hr and speed in m/s? Use 150 km as your distance.
  
  
  
  
  
  
  
  
  
  
10. A comet is cruising through the solar system at a speed of 34,720 kilometers per hour for 4 hours time. What is the total distance traveled by the comet during this time? Then convert to meters. (\*HINT: use KHD\_DCM)
  
  
  
  
  
  
  
  
  
  
11. What is the acceleration of a vehicle that goes from 21.2 m/s to 132 m/s in 5s? Find acceleration in both m/s/s and km/hr/s.